



THE UNIVERSITY OF IOWA
DEPARTMENT OF STATISTICS & ACTUARIAL SCIENCE

STAT:5100 Statistical Inference I

Fall 2022

9:30–10:20 a.m., MWF

66 SH

Course Syllabus

Contact Information

Instructor: Dr. Zhiwei (Josh) Tong

- *Email:* zhiwei-tong@uiowa.edu

This is the best way to contact me! Please include “STAT:5100” in your email subject.

- *Phone:* 1(319)467-0160
- *Office:* 374 SH
- *Office hours:* 2–3 p.m., MWF

Held in person unless otherwise announced. Also available by appointment.

- *Personal homepage:* <https://sites.google.com/view/ztong1997/home>

Grader: Mr. Zhen Wang

- *Email:* zhen-wang-1@uiowa.edu

Department Executive Officer: Professor Kung-Sik Chan

- *Office:* 241 SH
- *Email:* kung-sik-chan@uiowa.edu

Course Description and Objectives

This course is intended for first year graduate students in statistics, biostatistics, actuarial science, and other related disciplines. The instructor endeavors to deliver the basics of probability theory and some important techniques that are fundamental to statistical inference, in a rigorous but understandable way. Topics covered in this course include but not limited to review of probability, distribution theory (multiple random variables, moment-generating functions, transformations, conditional distributions), sampling distributions, order statistics, convergence concepts, and generating random samples.

Familiarity with linear algebra and calculus is desired, and the official prerequisites for this course are MATH:2850 and STAT:3101. After taking this course, students should be prepared to take the subsequent statistical inference course STAT:5101.

Course Materials

The required textbook for this course is the second edition of Statistical Inference by George Casella and Roger L. Berger. We will cover most of the first five chapters of this book. You will find problems from the book useful in enhancing your understanding of the concepts.

This course will use **ICON** (<http://icon.uiowa.edu>) for announcements, course notes, homework assignments, etc. Please **print out and bring** a copy of the relevant portions of the course notes for each class meeting.

Evaluation System

Assessment for the university grade comprises the following items:

Item	Weight	Schedule
Attendance	5%	Attendance and active engagement are encouraged
Assignments	20%	7 assignments spread over the semester
Midterms	40%	2 in-class midterm exams
Final	35%	TBA

- **Attendance: 5%**

Your attendance and engagement may affect your final grade (positively or negatively).

- **Assignments: 20%**

There will be an assignment every two weeks, for a total of 7 assignments spread over the entire semester. Assignments will be released on Fridays and will be due the following Friday. To minimize the spread of virus, your solutions must be scanned and submitted on

ICON. Late submission will only be credited at the instructor's discretion. Discussion with peer students is encouraged. However, what you hand in must ultimately **be your own work**.

- **Midterm Examinations: 40%**

There will be two closed-book 45-minute Midterm Examinations, each weighing 20% in determining the final grade. They are tentatively scheduled for October 7 and November 11, respectively. The exact schedule will be announced both in class and on ICON at least two weeks ahead.

- **Final Examination: 35%**

There will be a closed-book 2-hour Final Examination, weighing 35% in determining the final grade. It will be scheduled during the University Final Exam Week (December 12–16, 2022). The exact schedule will be announced both in class and on ICON once it is fixed by the Registrar.

Grading scheme. Plus/minus grades will be given in this course. An *approximate* guide is as follows:

Graduate students		
A- [86.5, 91)	A [91, 95.5)	A+ [95.5, 100]
B- [73, 77.5)	B [77.5, 82)	B+ [82, 86.5)
C- [59.5, 64)	C [64, 68.5)	C+ [68.5, 73)
D- [46, 50.5)	D [50.5, 55)	D+ [55, 59.5)
F [0, 46)		

Academic Honesty and Misconduct

All students in CLAS courses are expected to abide by the CLAS Code of Academic Honesty. Undergraduate academic misconduct must be reported by instructors to CLAS according to these procedures. Graduate academic misconduct must be reported to the Graduate College according to Section F of the Graduate College Manual.

Student Complaints

Students with a complaint about a grade or a related matter should first discuss the situation with the instructor, and finally with the Director or Chair of the school, department, or program offering the course.

Undergraduate students should contact CLAS Undergraduate Programs for support when the matter is not resolved at the previous level. Graduate students should contact the CLAS Associate Dean for Graduate Education and Outreach and Engagement when additional support is needed.

Drop Deadline for this Course

You may drop an individual course before the deadline; after this deadline you will need collegiate approval. You can look up the drop deadline for this course [here](#). When you drop a course, a “W” will appear on your transcript. The mark of “W” is a neutral mark that does not affect your GPA. Directions for adding or dropping a course and other registration changes can be found on the Registrar’s website. Undergraduate students can find policies on dropping and withdrawing [here](#). Graduate students should adhere to the academic deadlines and policies set by the Graduate College.

College of Liberal Arts and Sciences (CLAS) Course Policies

Attendance and Absences

University regulations require that students be allowed to make up examinations which have been missed due to illness or other unavoidable circumstances. Students with mandatory religious obligations or UI authorized activities must discuss their absences with me as soon as possible. Religious obligations must be communicated within the first three weeks of classes.

Exam Policies

Communication: UI Email

Students are responsible for all official correspondences sent to their UI email address (uiowa.edu) and must use this address for any communication with instructors or staff in the UI community.

Where to Get Help

Instructors: Note any department or university resources helpful for this course, such as Tutor Iowa: <https://tutor.uiowa.edu/>

University Policies

Accommodations for Students with Disabilities

Basic Needs and Support for Students

Classroom Expectations

Exam Make-up Owing to Absence

Free Speech and Expression

Mental Health

Military Service Obligations

Non-discrimination

Religious Holy Days

Sexual Harassment/Misconduct and Supportive Measures

Sharing of Class Recordings